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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/562,288

12/22/2005

Joel Jung

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09/20/2010

NXP, B.V.

NXP INTELLECTUAL PROPERTY & LICENSING

M/S41-SJ

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SAN JOSE, CA 95131

EXAMINER

ROGERS, SCOTT A

ART UNIT

PAPER NUMBER

2625

NOTIFICATION DATE

DELIVERY MODE

09/20/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/562,288	<b>Applicant(s)</b> JUNG ET AL.	
	<b>Examiner</b> Scott A. Rogers	<b>Art Unit</b> 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/11/2010</u> . | 6) <input checked="" type="checkbox"/> Other: <u>Detailed Action</u> .                  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiaoan Lu et al in view of Sullivan et al.

#### Referring to claim 1:

Xiaoan Lu et al disclose a method of encoding a sequence of pictures, a picture being divided into blocks of data, said encoding method comprising the steps of: computing a residual error block from a difference between a current block contained in a current picture and a candidate area using a prediction function (see Introduction – standard block based encoder), computing an entropy of the residual error block and an overall error between said current block and said candidate area (see section 2), estimating a power consumption of a video processing device adapted to implement said prediction function (see section 3), computing a rate-distortion value on the basis of the entropy, the overall error and the estimated power consumption of the video processing device (see section 4). Xiaoan et al are computing the rate-distortion value on the basis of the entropy and distortion in paragraph 2.1, but it is understood that the computation is also value based on estimated power consumption of the video

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processing device. That is to say, Xiaoan Lu et al discuss optimization to reduce power consumption by selecting optimal parameters for the rate-distortion computation.

Therefore, Xiaoan Lu et al are in effect computing the rate-distortion value on the basis of estimated power consumption.

Xiaoan Lu et al do not disclose applying the preceding steps to a set of candidate areas using a set of prediction functions in order to select a prediction function according to the rate-distortion value. However, such selection of prediction functions based on some kind of cost function is known in view of Sullivan et al. It would have been obvious to one of ordinary skill in the art to apply this concept taught by Sullivan et al in Xiaoan Lu et al to optimize selection of certain coding functions such as the prediction functions.

Referring to claim 3:

The result of modifying Xiaoan Lu et al in view of Sullivan et al would be to compute, for a given number of pictures, the power-rate-distortion value of the different prediction functions of the set and to select, for the encoding of following pictures, the prediction functions that minimize the power-rate-distortion value. Again, this is an optimization issue.

Referring to claims 4-5:

The result of modifying in view of Sullivan et al would be to estimate the power consumption of the video processing device from computation and transfer parameters of the prediction functions as should be clear for the discussion above. Also, it should

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be clear that the estimation of power consumption in Xiaoan Lu et al is of the video processing device from technical characteristics of the video processing device.

Referring to claim 6:

Xiaoan Lu et al disclose the rate-distortion value depends on a product of the estimated power consumption (as described above) and a weighting factor, said weighting factor being dependent on a power supply level of the video processing device (see last sentence in paragraph 3.1).

Referring to claims 7-9:

Xiaoan Lu et al disclose video encoder for encoding a sequence of pictures, a picture being divided into blocks of data, said video encoder comprising means for implementing the steps of the video encoding method described above (see Fig. 1). Xiaoan Lu et al also disclose a handheld apparatus (notebook computer) comprising a video encoder as described above which has a power supply for supplying said video encoder (see paragraph 3.2). And it is clear that Xiaoan Lu et al are using computer program instructions for implementing, when said program is executed by a processor, the video encoding method described above.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Xiaoan Lu et al in view of Sullivan et al as applied to claim 1 above, and further in view of well known prior art (Official Notice).

Referring to claim 2:

Xiaoan Lu et al do not get into estimating the power consumption of a video decoder for a prediction function of the set, but they do mention that while they have

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focused mainly on the power consumption of the transmitter where the encoder is involved, future work will consider the receiver power where the decoder is involved. And it is well known in the prior art to address decoder power and distortion optimization. Therefore, it would have been obvious to one of ordinary skill in the art in view of such known decoder optimization practices to extend what is taught by the combination of Xiaoan Lu et al and Sullivan et al to a scenario in which a decoder is involved so that power consumption of the decoder can be optimized in the same manner as described above for the encoder.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A Rogers whose telephone number is 571-272-7467. The examiner can normally be reached Monday through Friday 8:00am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Coles can be reached at 571-272-7402.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC2600 Customer Service at 571-272-2600. Official correspondence by facsimile should be sent to 571-273-8300. The USPTO Customer Service Center phone number is 800-PTO(786)-9199 or 571-272-1000.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Scott A Rogers/

Primary Examiner, Art Unit 2625

9 September 2010